

REMARKS

Applicants acknowledge and thank the Examiner for his courtesy in providing the concluding statement that “the prior art does not teach a sample solution that when mixed with the sample selectively modifies at least one dielectric property of at least one component of said sample and has a conductivity such that one or more moieties of said sample can be separated using dielectrophoretic forces; wherein the sample solution has a low osmolarity”. Applicants also acknowledge The Examiner’s statement that “claims 2, 7-14, 44-46, 51, 52, and 57-60 are free of prior arts”.

THE AMENDMENTS

Applicants cancel all pending claims, claims 1-3, 7-19, 21, 26-32, 34, 41-47, 51, 52, 54, and 57-60, and add new claims 61 to 99. These new claims generally conform to the cancelled claims, add no new subject matter, and are fully supported throughout the specification and the by the drawings and claims as filed. Support and reasoning for the amendments are provided below.

Support for New Claims and Reasons for Amendments

These amendments are made to clarify the claims in order to expedite allowance of the present application. Applicants reserve the right to prosecute cancelled claims in this or other applications. These claims add no new subject matter and are fully supported throughout the specification, including the drawings and the claims as originally filed.

Support for new claim 61 can be found in the specification on page 23, lines 23-26:

The present invention includes a sample solution that, when combined with a sample, modifies at least one dielectric property of at least one component of a sample, and results in a sample-sample solution mixture of a conductivity that allows for the dielectrophoretic separation of one or more moieties of the sample.

Further, on page 35, lines 28-31, the specification states:

In certain aspects of these preferred embodiments, a solution of the present invention preferably has a low osmolarity such that when added to a blood sample, the blood cells are in a hypotonic medium. In these embodiments, the final osmolarity is preferably between 20 mOsm and about 150 mOsm, most preferably between 30 mOsm and about 100 mOsm.

New dependent claim 62, reciting a solution with an osmolarity of between about 30 and about 100 mOsm also finds support in the passage cited immediately above.

New dependent claim 75 finds support on page 35 of the specification (lines 10-15):

Certain preferred embodiments of the present invention are sample solutions having a low conductivity that, when combined with a blood sample, selectively modify red blood cells such that they are not retained in a chamber subject to dielectrophoretic forces. In these preferred embodiments, a sample solution of the present invention preferably modifies a higher percentage of red blood cells than white blood cells, hereinafter referred to as a solution that selectively lyses red blood cells.

New dependent claims 76, 77, and 78 find support in the application on page 35, beginning on line 31 and extending to page 36, line 2:

Suitable solutes for use in low osmolarity solutions of the present invention include glycerol, sugars such as sucrose, dextrose, and mannose, and sugar alcohols such as mannitol and sorbitol.

New dependent claim 80, which reads: "The method of claim 79, wherein said sample is added to said chamber by continuous flow" is based on cancelled claim 26, where the term "blood sample" has been replaced by the term "sample". This claim finds support in the specification, for example, on page 43, lines 26-30, the specification states:

Preferably a sample, a sample solution, and optionally other solutions, buffers, preparations, or reagents are added to a chamber in a continuous flow mode, in which a continuous stream of fluid is injected or pumped into at least one inlet port, and non-retained sample components and fluids exit the chamber via at least one outlet port, but this is not a requirement of the present invention.

INFORMATION DISCLOSURE STATEMENT

Applicants confirm that an IDS was filed on May 5, 2000 and entered. Applicants resubmit additional copies of the cited references and Forms 1449 herewith. No fee is deemed necessary for this filing of duplicate materials at the request of the USPTO.

SPECIFICATION OBJECTIONS

Applicants have cancelled claims 13 and 14. Applicants therefore respectively request that the objection be removed.

CLAIMS ARE DEFINITE UNDER 35 USC §112

The Examiner alleges that claim 2 is indefinite for reciting “low osmolarity”. The Examiner has rejected claims 7-14 (that depend from claim 2), as well as 44-46 that depend from claim 7, and 57-60 that depend from claim 44, on the same basis. Applicants do not agree that the term “low osmolarity” is indefinite. The specification states on page 8 (lines 11 and 12): “A solution having “low osmolarity” is a solution that is hypotonic with respect to blood cells, and should be less than about 300 mOsm.”. However, in order to expedite prosecution, Applicants have cancelled claim 2 and incorporated parameters of low osmolarity into new independent claim 61. Applicants have also cancelled claims 7-14 and added new claims 64-69 that correspond to cancelled claims 7-12 that are dependent on new claim 61. Applicants also have cancelled claims 44-46 and 57-60, and presented new claims 89-91 corresponding to cancelled

claims 44-46 that depend from new claim 64, and 96-99 corresponding to cancelled claims 57-60 that depend from new claim 89. Applicants therefore request that the rejection be withdrawn.

The Examiner has also alleged that dependent claim 26 is indefinite for use of the term “blood sample” which lacks antecedent basis. Applicants have cancelled claim 26, and added new dependent claim 80, that recites “sample” rather than “blood sample”. Antecedent basis for “sample” can be found in new claim 70 (formerly claim 15), from which new claim 80 depends. Applicants therefore respectfully request that the rejection be withdrawn.

The Examiner has also alleged that dependent claims 41 and 42 are indefinite as they depend from a cancelled claim. Applicants have cancelled claims 41 and 42. Applicants therefore respectfully request that the rejection be withdrawn.

CLAIMS ARE NOVEL UNDER 35 USC §102

The Examiner alleges that claims 1 and 15-18 are anticipated under U.S.C. 102 (b) by Ebersole et al. (US 5,578,460). Applicants do not agree that Ebersole et al. discloses a solution that when mixed with a sample: “a) selectively modifies at least one dielectric property of at least one component of said sample; and b) has a conductivity such that one or more moieties of said sample can be separated using dielectrophoretic forces”, as recited in claim 1. However, to expedite prosecution of the application, Applicants have cancelled claim 1, as well as claims 15-18 that depend from claim 1. New independent claim 61 discloses a solution that when mixed with a sample “a) selectively modifies at least one dielectric property of at least one component of said sample; b) has a conductivity such that one or more moieties of said sample can be separated using dielectrophoretic forces; and c) has an osmolarity of between 20mOsm and about 150mOsm”. New claims 70-73, formerly dependent claims 15-18, are dependent on new claim 61. Ebersole et al. does not disclose a solution that has an osmolarity of between 20mOsm and about 150mOsm, as recited in claim 61. Accordingly Ebersole et al. does not anticipate the claimed invention, and applicants respectfully request that the rejection be withdrawn.

The Examiner alleges that independent claim 1, and claims 3, 15-19, 21, 27, 28, 30, 31, 32, 34, and 43 that depend from claim 1, are anticipated under 35 U.S.C. 102 (e) by Chen et al. (US 6,280,590). Applicants do not agree that Chen et al. discloses a solution that when mixed with a sample: “a) selectively modifies at least one dielectric property of at least one component of said sample, and b) has a conductivity such that one or more moieties of said sample can be separated using dielectrophoretic forces”, as recited in claim 1. However, to expedite prosecution of the application, applicants have cancelled claims 1, 3, 15-19, 21, 27, 28, 30, 31, 32, 34, and 43. New independent claim 61 discloses a solution that when mixed with a sample “a) selectively modifies at least one dielectric property of at least one component of said sample, b)) has a conductivity such that one or more moieties of said sample can be separated using dielectrophoretic forces, and c) has an osmolarity of between 20mOsm and about 150mOsm”. New claims 70-73, formerly dependent claims 15-19, are dependent on new claim 61. New claims 79, and 81-86, formerly claim 21, and 27- 32 are also dependent on new claim 61. Chen et al. does not disclose a solution that has an osmolarity of between 20mOsm and about 150mOsm, as recited in claim 61. Accordingly, Chen et al. does not anticipate the claimed invention, and Applicants respectfully request that the rejection be withdrawn.

CLAIMS ARE NONOBVIOUS UNDER 35 USC §103 (a)

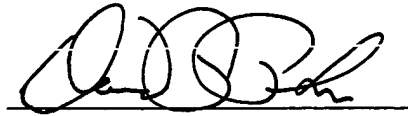
The Examiner alleges that dependent claim 29 is obvious under U.S.C. 103 (a) over Chen et al. (US 6,280,590). Applicants have cancelled claim 29, and provided new claim 79, based on cancelled claim 29. New claim 79 depends from new independent claim 61, which recites a solution that has an osmolarity of between 20mOsm and about 150mOsm. A solution having an osmolarity of between 20mOsm and about 150mOsm is not described in Chen et al. Accordingly, Chen et al. does not render the claimed invention obvious, and applicants respectfully request that the rejection be withdrawn.

Applicants respectfully submit that the claims are ready for examination and in condition for allowance.

Respectfully submitted,

Date:

July 28, 2003

A handwritten signature in black ink, appearing to read "David R. Preston", written over a horizontal line.

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Attorney Docket No. ART-00102.P.1

In the event this paper is deemed not timely filed the applicants hereby petition for an appropriate extension of time. The fee for this extension may be charged to Deposit Account No.501321 along with any other additional fees which may be required with respect to this paper; any overpayment should be credited to the account. If any fees charged to this Deposit Account will exceed \$500, applicant respectfully requests that its counsel be notified of such amounts before the Deposit Account is charged.